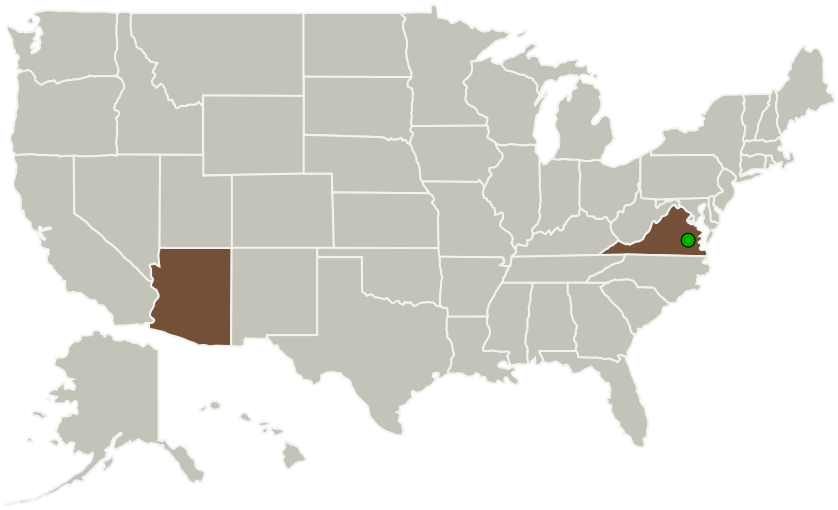
1.55 Micron High Peak Power Fiber Amplifier, Phase II

Completed Technology Project (2013 - 2015)

Project Introduction

In this proposal, we propose to demonstrate and build a 1.55 micron single frequency high energy and high peak power fiber amplifier by developing an innovative Er-doped gain fiber with large core diameter and high gain per unit length. 1.55 micron single frequency high energy and high peak power fiber amplifier is needed for coherent lidar and sensing. In Phase II, we will further optimize the Er-doped glasses and fibers based upon Phase I results, further increase the pulse energy and peak power, and build a prototype with peak power of 15kW. The output laser beam is diffraction limited. Successful demonstration of such a fiber amplifier will enable many new NASA and commercial applications.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
AdValue Photonics, Inc.	Lead Organization	Industry Small Disadvantaged Business (SDB)	Tucson, Arizona
Langley Research Center(LaRC)	Supporting Organization	NASA Center	Hampton, Virginia

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Primary U.S. Work Locations	
Arizona	Virginia

Images

Briefing Chart
1.55 Micron High Peak Power Fiber Amplifier, Phase II
(https://techport.nasa.gov/image/127675)

Organizational Responsibility

Responsible Mission Directorate:
Space Technology Mission Directorate (STMD)

Lead Organization:
AdValue Photonics, Inc.

Responsible Program:
Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:
Jason L Kessler

Program Manager:
Carlos Torrez

Principal Investigator:
Shibin S Jiang

Co-Investigator:
Shibin Jiang

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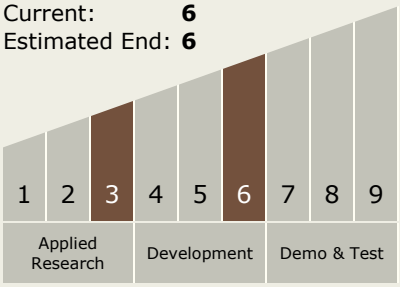
Technology Maturity (TRL)

Start: **3**
Current: **6**
Estimated End: **6**



Technology Areas

Primary:

- TX08 Sensors and Instruments
  - TX08.1 Remote Sensing Instruments/Sensors
    - TX08.1.5 Lasers

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System